

Erosion and Deposition ▪ *Section Summary*

Changing Earth's Surface

Guide for Reading

- What processes wear down and build up Earth's surface?
- What causes the different types of mass movement?

Erosion is the process by which natural forces move weathered rock and soil from one place to another. Gravity, running water, glaciers, waves, and wind all cause erosion. The material moved by erosion is **sediment**. When the agents of erosion lay down sediment, **deposition** occurs. Deposition changes the shape of the land. **Weathering, erosion, and deposition act together in a cycle that wears down and builds up Earth's surface.** Erosion and deposition are at work everywhere on Earth. Erosion and deposition are never-ending.

Gravity pulls everything toward the center of Earth. **Gravity** is the force that moves rock and other materials downhill. Gravity causes **mass movement**, any one of several processes that move sediment downhill. **The different types of mass movement include landslides, mudslides, slump, and creep. Mass movement can be rapid or slow.**

The most destructive type of mass movement is a landslide, which occurs when rock and soil slide quickly down a steep slope. Some landslides contain huge masses of rock, while others may contain only a small amount of rock and soil.

A mudflow is the rapid downhill movement of a mixture of water, rock, and soil. The amount of water in a mudflow can be as high as 60 percent. Mudflows often occur after heavy rains in a normally dry area. In clay soils with a high water content, mudflows may occur even on very gentle slopes. An earthquake can trigger both mudflows and landslides.

In the type of mass movement known as a slump, a mass of rock and soil suddenly slips down in one large mass. It looks as if someone pulled the bottom out from under part of the slope. A slump often occurs when water soaks the base of a mass of soil that is rich in clay.

Creep is the very slow downhill movement of rock and soil. It occurs most often on gentle slopes. Creep often results from the freezing and thawing of water in cracked layers of rock beneath the soil. Creep is so slow that you can barely notice it, but you can see its effects in objects such as telephone poles, gravestones, and fenceposts. Creep may tilt these objects at spooky angles.